

## Sequence Listing

<110> JAPAN ATOMIC ENERGY RESEARCH INSTITUTE

<120> PLANT PIGMENT ACCUMULATION GENE

<130> 030385

<150> JAPAN, 2003-066310

<151> MARCH 12, 2003

<160> 33

<210> 1

<211> 645

<212> DNA

<213> *Arabidopsis thaliana*

<220>

<223> Sequence of TT19 gene cDNA

<400> 1

```
atggttgtga aactatatgg acaggtaaca gcagcttgic cacaaagagt ctgtctttgt 60
tttctcgaga aaggaattga atttgagatt attcatatcg atcttgatac atttgagcaa 120
aaaaaaccag aacatcttct tcgtcagcca ttiggicaag ttccagccat agaagatgga 180
gatttcaagc ttttgaatc acgagccatc gcgagatact acgtaccaa gticgcggac 240
caaggcacga acctttiggg caagtctcta gagcaccgag ccatcgtgga ccagtgggct 300
gacgtggaga cctattactt caacgttctg gcccaacccc tcgtgattaa cctaatactc 360
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aagcctaggt taggcgagaa atgtgacgtc gttttggtcg aggatctcaa agtgaagcta 420  
ggagtggctt tggacatata caataaccgg ctttcttcga accggttttt ggctggtgaa 480  
gaattcacta tggctgatit gacgcacatg ccggcgaatgg ggtacttgat gagtataacc 540  
gatataaacc agatgggttaa ggctcggggg agttttaacc ggtgggtggga agagatttcg 600  
gatagaccgt ctiggaagaa gcttatgggtg ctggctgggtc actga 645

<210> 2

<211> 214

<212> PRT

<213> Arabidopsis thaliana

<220>

<223> Putative amino acid sequence of TT19

<400> 2

Met	Val	Val	Lys	Leu	Tyr	Gly	Gln	Val	Thr	Ala	Ala	Cys	Pro	Gln	Arg
			5					10						15	
Val	Leu	Leu	Cys	Phe	Leu	Glu	Lys	Gly	Ile	Glu	Phe	Glu	Ile	Ile	His
			20					25						30	
Ile	Asp	Leu	Asp	Thr	Phe	Glu	Gln	Lys	Lys	Pro	Glu	His	Leu	Leu	Arg
			35					40						45	
Gln	Pro	Phe	Gly	Gln	Val	Pro	Ala	Ile	Glu	Asp	Gly	Asp	Phe	Lys	Leu
			50					55						60	
Phe	Glu	Ser	Arg	Ala	Ile	Ala	Arg	Tyr	Tyr	Ala	Thr	Lys	Phe	Ala	Asp
			65					70						75	
Gln	Gly	Thr	Asn	Leu	Leu	Gly	Lys	Ser	Leu	Glu	His	Arg	Ala	Ile	Val
			85					90						95	
Asp	Gln	Trp	Ala	Asp	Val	Glu	Thr	Tyr	Tyr	Phe	Asn	Val	Leu	Ala	Gln

	100		105		110										
Pro	Leu	Val	Ile	Asn	Leu	Ile	Ile	Lys	Pro	Arg	Leu	Gly	Glu	Lys	Cys
	115		120		125										
Asp	Val	Val	Leu	Val	Glu	Asp	Leu	Lys	Val	Lys	Leu	Gly	Val	Val	Leu
	130		135		140										
Asp	Ile	Tyr	Asn	Asn	Arg	Leu	Ser	Ser	Asn	Arg	Phe	Leu	Ala	Gly	Glu
145			150		155							160			
Glu	Phe	Thr	Met	Ala	Asp	Leu	Thr	His	Met	Pro	Ala	Met	Gly	Tyr	Leu
			165		170							175			
Met	Ser	Ile	Thr	Asp	Ile	Asn	Gln	Met	Val	Lys	Ala	Arg	Gly	Ser	Phe
			180		185							190			
Asn	Arg	Trp	Trp	Glu	Glu	Ile	Ser	Asp	Arg	Pro	Ser	Trp	Lys	Lys	Leu
	195		200		205										
Met	Val	Leu	Ala	Gly	His										
	210														

<210> 3

<211> 20

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as TT19-f0, which is used for amplifying TT19 genomic region by PCR.

<400> 3

gagaacccca aaaacgtcac

20

<210> 4

<211> 20

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as TT19-r0, which is used for amplifying TT19 genomic region by PCR.

<400> 4

gttgtgaggg ttgggtagaa 20

<210> 5

<211> 20

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as TT19-f1, which is used for amplifying TT19 genomic region by PCR.

<400> 5

gtggttggtg ggaagagaag 20

<210> 6

<211> 20

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as TT19-r1, which is used for amplifying TT19 genomic region by PCR.

<400> 6

cgatggctcg tgattcttag 20

<210> 7

<211> 20

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as TT19-f2, which is used for amplifying TT19 genomic region by PCR.

<400> 7

ggtcaagttc cagccataga 20

<210> 8

<211> 20

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as TT19-r2, which is used for amplifying TT19 genomic region by PCR.

<400> 8

agcgagagga aagtggaaca 20

<210> 9

<211> 20

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as TT19-f3, which is used for amplifying TT19 genomic region by PCR.

<400> 9

ccctcattag gccaaagagaa 20

<210> 10

<211> 20

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as TT19-r3, which is used for amplifying TT19 genomic region by PCR.

<400> 10

gagcttatgt ggggaaagtc 20

<210> 11

<211> 25

<212> DNA

<213> Artificial sequence

<220>

<223> Nested primer designated as MKP11-R4, which is used in TAIL-PCR for isolating two junction sequences of inverted DNA in tt19-1 mutant.

<400> 11

atcaagtacc ccatcgccgg catgt 25

<210> 12

<211> 25

<212> DNA

<213> Artificial sequence

<220>

<223> Nested primer designated as MKP11-R5, which is used in TAIL-PCR for isolating two junction sequences of inverted DNA in tt19-1 mutant.

<400> 12

ggcatgtgcg tcaaatcagc catag 25

<210> 13

<211> 25

<212> DNA

<213> Artificial sequence

<220>

<223> Nested primer designated as MKP11-R6, which is used in TAIL-PCR for isolating two junction sequences of inverted DNA in tt19-1 mutant.

<400> 13

aaccggttcg aagaaagccg gttat

25

<210> 14

<211> 26

<212> DNA

<213> Artificial sequence

<220>

<223> Nested primer designated as MKP11-F7, which is used in TAIL-PCR for isolating two junction sequences of inverted DNA in tt19-1 mutant.

<400> 14

atatggacag gtaacagcag cttgtc

26

<210> 15

<211> 26

<212> DNA

<213> Artificial sequence

<220>

<223> Nested primer designated as MKP11-F8, which is used in TAIL-PCR for isolating two junction sequences of inverted DNA in tt19-1 mutant.

<400> 15

gcagcttgct cacaaagagt cttgct

26

<210> 16

<211> 26

<212> DNA



<213> Artificial sequence

<220>

<223> Nested primer designated as MKP11-F9, which is used in TAIL-PCR for isolating two junction sequences of inverted DNA in tt19-1 mutant.

<400> 16

gctttgtttt ctcgagaaag gaattg 26

<210> 17

<211> 24

<212> DNA

<213> Artificial sequence

<220>

<223> Nested primer designated as bCC5-8-R1, which is used in TAIL-PCR in tt19-2 mutant.

<400> 17

gacgtcacat ttctgccta acct 24

<210> 18

<211> 24

<212> DNA

<213> Artificial sequence

<220>

<223> Nested primer designated as bCC5-8-R2, which is used in TAIL-PCR in tt19-2 mutant.

<400> 18

gaggggttgg gccagaacgt tgaa 24

<210> 19

<211> 24

<212> DNA

<213> Artificial sequence

<220>

<223> Nested primer designated as bCC5-8-R3, which is used in  
TAIL-PCR in tt19-2 mutant.

<400> 19

cgatggctcg gtgctctaga gact 24

<210> 20

<211> 16

<212> DNA

<213> Artificial sequence

<220>

<223> Degenerate AD primer (AD2) for amplifying the rearranged DNA  
segments.

<400> 20

ngtcgaswga nawgaa 16

<210> 21

<211> 16

<212> DNA

<213> Artificial sequence

<220>

<223> Degenerate AD primer (AD3) for amplifying the rearranged DNA segments.

<400> 21

wgtgnagwan canaga 16

<210> 22

<211> 16

<212> DNA

<213> Artificial sequence

<220>

<223> Another AD primer (AD1) for amplifying the rearranged DNA segments.

<400> 22

gtncgaswca nawgtt 16

<210> 23

<211> 30

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as TT19-RT/f2 which is used in RT-PCR method.

<400> 23

gaacatcttc ttcgtcagcc atttgggtcaa 30

<210> 24

<211> 31

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as TT19-RT/r1 which is used in RT-PCR method.

<400> 24

ggttcttcag atcatcataa attggagcta 31

<210> 25

<211> 22

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as CHS-UP which is used in RT-PCR method.

<400> 25

atggctgggtg cttctttcttt gg 22

<210> 26

<211> 22

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as CHS-RP which is used in RT-PCR method.

<400> 26

tctctccgac agatgtgtca gg 22

<210> 27

<211> 21

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as F3'H-UP which is used in RT-PCR method.

<400> 27

catggcaact ctatttctca c 21

<210> 28

<211> 22

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as F3'H-RP which is used in RT-PCR method.

<400> 28

cgtcacccgtc aagatcagtt cc 22

<210> 29

<211> 22

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as DFR-UP which is used in RT-PCR method.

<400> 29

atggtttagtc agaaagagac cg 22

<210> 30

<211> 22

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as DFR-RT/r1 which is used in RT-PCR method.

<400> 30

gacacgaaat acatccatcc tg 22

<210> 31

<211> 26

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as CHI-f1, which is used for amplifying CHI gene.

<400> 31

ctcaacaatg tcttcatcca acgcct 26

<210> 32

<211> 22

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as CHI-r1, which is used for amplifying CHI gene.

<400> 32

cgaaaacgca accgtaagag ag 22

<210> 33

<211> 22

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as F3H-f1, which is used for amplifying F3H gene.

<400> 33

gccggagagt ctaagctcaa ct 22

<210> 34

<211> 22

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as F3H-r1, which is used for amplifying F3H gene.

<400> 34

ccacggcctg atgatacagca tt 22

<210> 35

<211> 22

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as LD0X-f2, which is used for amplifying LD0X gene.

<400> 35

gatggttgcg gttgaaagag tt 22

<210> 36

<211> 22

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as LD0X-r2, which is used for amplifying LD0X gene.



<400> 36

aaagcgctta catcggtgtg ag 22

<210> 37

<211> 26

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as AN9-5', which is used for amplifying AN9 gene.

<400> 37

ggatccatgg ttgtgaaagt gcatgg 26

<210> 38

<211> 26

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as AN9-3', which is used for amplifying AN9 gene.

<400> 38

gagctcgctcc cgtactccac aacaat 26